# Chemical: Biochemical and Environmental Engineering (Option B)

**September 2021** (students who entered *first year* in September 2018 or later)

## Year 2:

### Term A
- NMM 2270a  Applied Math for Engineering II (Formerly AM 2270A)
- CBE 2206a  Introductory Industrial Organic Chemistry
- CBE 2214a  Engineering Thermodynamics
- CBE 2220a  Chemical Process Calculations
- CBE 2290a  Fundamentals of Biochemical and Environmental Engineering
- Writing 2130f  Building Better (Communication) Bridges: Rhetoric & Professional Communication for Engineers

### Term B
- NMM 2277b  Applied Math Chemical and Civil Engineering III (Formerly AM 2277B)
- CBE 2207b  Applied Industrial Organic Chemistry
- CBE 2221b  Fluid Flow
- CBE 2224b  Chemical Eng. Thermodynamics
- CBE 2291b  Computational Methods for Engineering
- SS 2143b  Applied Statistics and Data Analysis for Engineers

## Year 3:

### Term A
- CBE 3307a  Energy & Environment
- CBE 3315a  Reaction Engineering
- CBE 3318a  Introduction to Chemical Process Simulation
- CBE 3322a  Heat Transfer Operations
- CBE 3330a  Bioreaction & Bioprocess Engineering
- CBE 3396y  Biochemical Engineering Lab

### Term B
- CBE 3310b  Process Dynamics and Control
- CBE 3316b  Sustainable Chemical Engineering & Life Cycle Analysis
- CBE 3319b  Introduction to Plant Design and Safety
- CBE 3323b  Staged Operations
- CBE 3324b  Mass Transfer Operations
- CBE 3396y  Biochemical Engineering Lab
- CBE 4403b  Biochemical Separation Process

## Year 4:

### Term A
- CBE 4498  Biochemical Process and Plant Design
  Two 0.5 Technical elective
  Two 0.5 Non-technical elective taken from approved list

### Term B
- CBE 4498  Biochemical Process and Plant Design
  ELI 4110g  Engineering Ethics, Sustainable Development and the Law
  Two 0.5 Technical elective
  0.5 Non-technical elective taken from approved list

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**NOTES:**

**Non-technical Electives:**
Please choose a maximum of 1.0 credits (one 1.0 credit course or two 0.5 credit courses) from the 1000 level and a minimum of one 0.5 credit from the 2000 (or higher) level.

http://www.eng.uwo.ca/undergraduate/upper_year/electives.html

**Technical Elective List:**
Some technical electives may not be offered in a given academic year. Consult the Department for accurate listing.

<table>
<thead>
<tr>
<th>General Chemical Engineering Courses</th>
<th>Biochemical and Environmental Engineering Courses</th>
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<tbody>
<tr>
<td>CBE 4404a/b  Downstream Processing in Pharmaceutical Manufacturing</td>
<td></td>
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<tr>
<td>CBE 4413a/b  Selected Topics in Chemical Engineering</td>
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<td>CBE 4416a/b  Carbon Footprint Management</td>
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<td>CBE 4417a/b  Catalytic Processes</td>
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<td>CBE 4418a/b  Industrial Multiphase Reactor Design</td>
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<td>CBE 4420a/b  Computer Process Control</td>
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<td>CBE 4428a/b  Introduction to Nanoengineering</td>
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<td>CBE 4432a/b  Energy and Fuels Production Systems</td>
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<td>CBE 4485a/b  Energy and Society</td>
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<tr>
<td>CBE 4493a/b  Polymer Engineering</td>
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*Accelerated Masters students can take a graduate course with special permission from the Department Chair.*